
Moisture measuring in on-/offroad applications

Litronic planar sensor P80-CAN

LIEBHERR

Liebherr-Mischtechnik GmbH





Planar sensor P80-CAN

High-tech sensors „Made in Germany“

- Sensor for determining the relative permittivity depending on material moisture content and density
- Signal transmission via CAN 2.0 B
- Mean value and median filter
- Streaming technology

Development

Since 1985 Liebherr develops, produces and distributes efficient moisture measurement systems for the industrial automation and mobile machines around the world. At the Liebherr factory in Bad Schussenried the sensors are produced and calibrated in an ESD-protected production line.

Each sensor will be tested separately in a several hour process across the entire working temperature range before leaving the factory.

The P80-CAN sensors are characterized by their flexibility and robustness. They are ideally suited for on/off-road applications such as large machines, construction and agricultural machinery.

Sensor basic data

Diameter	mm	78.0
Diameter with collar	mm	80.0
Housing height	mm	43.1
Height with socket	mm	56
Weight	kg	0.625
Housing material	Stainless steel 1.4305	
Cover material	Stainless steel 1.4301	
Material wear plate	Ceramic Al2O3	
Process connection	Clamping flange	
Protection class	IP 68 / IP X9K	

Sensor for temperature

Measured value	1. Electronics temperature 2. Shield temperature	
Temperature resolution oscillator temperature	K	0.002
Temperature resolution output	K	0.01
Absolute measuring error oscillator temperature	K	2
Absolute measuring error shield temperature	K	0.1
Update cycle	ms	50
Measuring range	°C	-10 bis 80

Electrical connection

Supply voltage	V	12 (min/max 6-36)
Power consumption	17 mA@12V	
Reverse polarity protection	Yes	

Sensor for moisture content

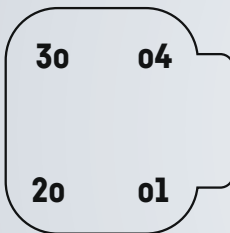
Measured value	Relative permittivity with high resolution, depending on material moisture content and material density	
Frequency	MHz	21-25
Capacity resolution	aF	200
Update cycle	ms	50
Operating temperature	°C	5-70
Temperature drift	≤ 10 measuring parts/K	
Material penetration depth (depending on material)	cm	3-5 (influence of measuring parts decreases exponentially with depth)

Measured value transmission

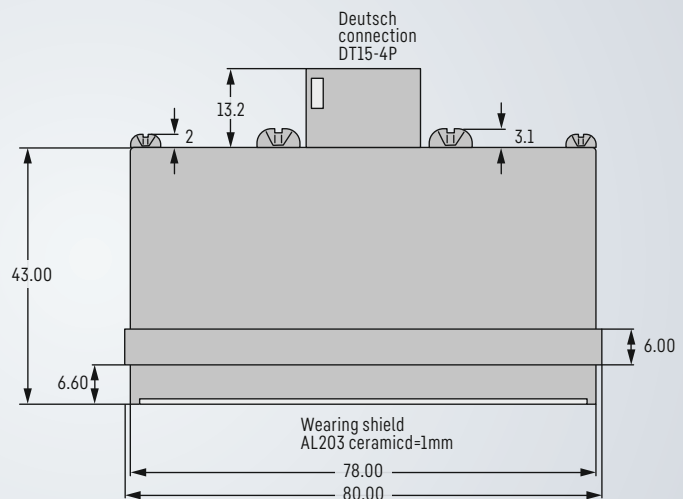
Bus type	CAN 2.0 B	
Baud rate	bit/s	250,000
Transceiver	3.3-V cross-connection protection, overvoltage protection up to +/- 36 V, loss of ground protection, over temperature (thermal shutdown) protection and common mode transient protection of +/- 100 V	
Bus termination	External, internal possible	

Connection

Connection	Deutsch DT15-4P
OV / GND	Pin 1
CAN-Low	Pin 2
CAN-High	Pin 3
+12 V	Pin 4



Connector pin numbering



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